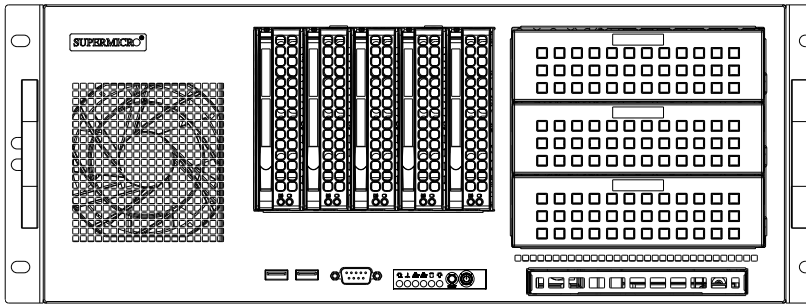
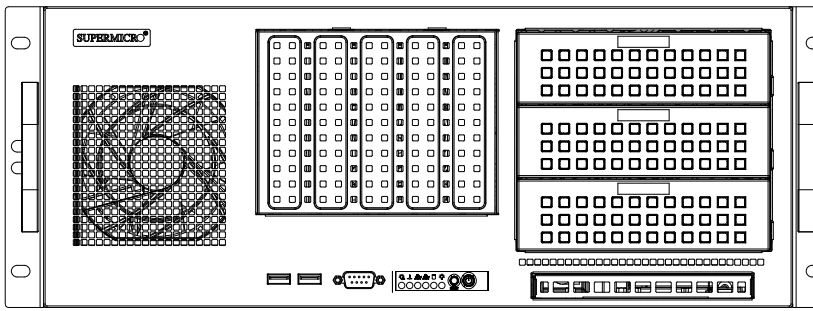
SUPERO®

SC842 Chassis Series





SC842TQ-865B SC842TQ-665B

SC842i-500B

USER'S MANUAL

1.0b

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Preface

About This Manual

This manual is written for professional system integrators and PC technicians. It provides information for the installation and use of the SC842 chassis. Installation and maintenance should be performed by experienced technicians only.

Supermicro's SC842 4U chassis features a unique and highly-optimized design for single and dual Intel/AMD processors. The chassis is equipped with a 500, 665 or 865 Watt high-efficiency power supply. High-performance fans provide ample optimized cooling for FB-DIMM memory modules. The chassis supports up to five 3.5" SAS/SATA hard drives which offer maximum storage capacity in a 4U form factor.

This document lists compatible parts available when this document was published. Always refer to the our Web site for updates on supported parts and configurations.

Manual Organization

Chapter 1: Introduction

The first chapter provides a checklist of the main components included with this chassis and describes the primary features of the SC842 chassis. This chapter also includes contact information.

Chapter 2: System Safety

This chapter lists warnings, precautions, and system safety. You should thoroughly familiarize yourself with this chapter for a general overview of safety precautions that should be followed before installing and servicing this chassis.

Chapter 3: Chassis Components

Refer here for details on this chassis model including the fans, hard drives and other components.

Chapter 4: System Interface

Chapter 4 provides details on the system interface, which includes the functions and information provided by the control panel on the chassis as well as other LEDs located throughout the system.

Chapter 5: Chassis Setup and Maintenance

Refer to this chapter for detailed information on this chassis. You should follow the procedures given in this chapter when installing, removing, or reconfiguring your chassis.

Chapter 6: Rack Installation

This chapter details information on installing the chassis into a rack. You should follow the procedures given in this chapter when installing, removing or reconfiguring your chassis in a rack environment.

Appendix A: SC842 Chassis Cables
Appendix B: SC842 Power Supply Specifications
Appendix C: SAS-842TQ Backplane Specifications

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Appendix A SC842 Chassis Cables

Appendix B SC842 Power Supply Specifications

Appendix C SAS-842TQ Backplane Specifications

Notes

Chapter 1

Introduction

1-1 Overview

Supermicro's SC842 4U chassis features a unique and highly-optimized design. The chassis is equipped with a high-efficiency power supply. High-performance fans provide ample optimized cooling. Up to five 3.5" drives provide maximum storage capacity in a 4U form factor.

1-2 Shipping List

Part Numbers

Please visit the Supermicro Web site for the latest shipping lists and part numbers for your particular chassis model:

http://www.supermicro.com/products/chassis/4U/?chs=842

SC842 Chassis Series				
Model	**CPU**	**HDD**	**I/O Slots**	**Power Supply**
SC842TQ-865B	DP/UP	5x 3.5" SAS/ SATA drives	7x FF	865W
SC842TQ-665B	DP/UP	5x 35" SAS/ SATA drives	7x FF	665W
SC842i-500B	DP/UP	5x internal fixed SAS/ SATA drives	7x FF	500W

Legend:
DP/UP: Dual processor/single processor
FF: Full height, full length PCI slots.

1-3 Chassis Features

The SC842 high-performance chassis includes the following features:

CPU Support

The SC842 chassis supports single and dual Intel/AMD processors. Please refer to the motherboard specifications pages on our Web site for updates on supported processors for this chassis, at www.supermicro.com.

Hot-Swappable Hard Drives

The SC842TQ model chassis features hard drive bays which support up to five hot-swappable 3.5" SAS/SATA hard drives. Once set up correctly, hot-swappable drives can be removed without powering down the server. In addition, these drives support SES2 (SAS/SATA). 3.5" hard drives are sold separtately.

Internal Hard Drives

The SC842i model chassis support five internally mounted SAS/SATA hard drives. In the unlikely event of a hard drive failure, the system must be powered-down and disconnected from any power source before removing these hard drives.

I/O Expansion slots

Each version of the SC842 chassis includes seven full-height, full-length I/O PCI slots.

Peripheral Drives

Each SC842 chassis supports one slim DVD drive and up to three 5-1/4" drives.

Other Features

Other onboard features are included to promote system health. These include up to two rear cooling fans, a convenient power switch, reset button, and LED indicators.

1-4 Contacting Supermicro

Headquarters

Address:	Super Micro Computer, Inc.
	980 Rock Ave.
	San Jose, CA 95131 U.S.A.
Tel:	+1 (408) 503-8000
Fax:	+1 (408) 503-8008
Email:	marketing@supermicro.com (General Information)
	support@supermicro.com (Technical Support)
Web Site:	www.supermicro.com

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	's-Hertogenbosch, The Netherlands
Tel:	+31 (0) 73-6400390
Fax:	+31 (0) 73-6416525
Email:	sales@supermicro.nl (General Information)
	support@supermicro.nl (Technical Support)
	rma@supermicro.nl (Customer Support)

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	4F, No. 232-1, Liancheng Rd.
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Tel:	+886-(2) 8226-3990
Fax:	+886-(2) 8226-3991
Web Site:	www.supermicro.com.tw

Technical Support:

Email:	support@supermicro.com.tw
Tel:	+886-(2) 8226-5990

Notes

Chapter 2

System Safety

2-1 Overview

This chapter provides a quick setup checklist to get your chassis up and running. Following the steps in order given should enable you to have your chassis set up and operational within a minimal amount of time. These instructions assume that you are an experienced technician, familiar with common concepts and terminology.

2-2 Warnings and Precautions

You should inspect the box the chassis was shipped in and note if it was damaged in any way. If the chassis itself shows damage, file a damage claim with the carrier who delivered your system.

Decide on a suitable location for the rack unit that will hold the chassis. It should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated.

Place the chassis near a grounded power outlets. The SC842 chassis includes a power supply which requires a grounded outlet.

2-3 Preparing for Setup

The SC842 chassis includes mounting screws you will need to install the system into an open (two-post) rack. Optional mounting rails are available for installation of the chassis into a four-post rack. Part numbers for these mounting rails may be found on the Supermicro Web site at http://www.supermicro.com/products/chassis/4U/?chs=842. Please read this manual in its entirety before beginning the installation procedure.

2-4 Electrical Safety Precautions

Basic electrical safety precautions should be followed to protect yourself from harm and the SC842 from damage:

- Be aware of the locations of the power on/off switch on the chassis as well as the room's emergency power-off switch, disconnection switch or electrical outlet. If an electrical accident occurs, you can then quickly remove power from the system.
- Do not work alone when working with high-voltage components.
- Power should always be disconnected from the system when removing or installing main system components, such as the serverboard, memory modules and the DVD-ROM (not necessary for hot-swappable drives). When disconnecting power, you should first power-down the system with the operating system and then unplug the power cords from all the power supply modules in the system.
- When working around exposed electrical circuits, another person who is familiar with the power-off controls should be nearby to switch off the power, if necessary.
- Use only one hand when working with powered-on electrical equipment. This is to avoid making a complete circuit, which will cause electrical shock. Use extreme caution when using metal tools, which can easily damage any electrical components or circuit boards they come into contact with.
- Do not use mats designed to decrease electrostatic discharge as protection from electrical shock. Instead, use rubber mats that have been specifically designed as electrical insulators.
- The power supply power cord must include a grounding plug and must be plugged into grounded electrical outlets.
- Serverboard battery: CAUTION - There is a danger of explosion if the onboard battery is installed upside down, which will reverse its polarities. This battery must be replaced only with the same or an equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

- Please handle used batteries carefully. Do not damage the battery in any way; a damaged battery may release hazardous materials into the environment. Do not discard a used battery in the garbage or a public landfill. Please comply with the regulations set up by your local hazardous waste management agency to dispose of your used battery properly.

- DVD-ROM laser: CAUTION - This server may have come equipped with an optional DVD-ROM drive. To prevent direct exposure to the laser beam and hazardous radiation exposure, do not open the enclosure or use the unit in any unconventional way.

2-5 General Safety Precautions

- Keep the area around the chassis clean and free of clutter.

- Place the chassis top cover and any system components that have been removed away from the system or on a table so that they won't accidentally be stepped on.

- While working on the system, do not wear loose clothing such as neckties and unbuttoned shirt sleeves, which can come into contact with electrical circuits or be pulled into a cooling fan.

- Remove any jewelry or metal objects from your body, which are excellent metal conductors that can create short circuits and harm you if they come into contact with printed circuit boards or areas where power is present.

- After accessing the inside of the system, close the system back up and secure it to the rack unit with the retention screws after ensuring that all connections have been made.

2-6 System Safety

Electrostatic discharge (ESD) is generated by two objects with different electrical charges coming into contact with each other. An electrical discharge is created to neutralize this difference, which can damage electronic components and printed circuit boards. The following measures are generally sufficient to neutralize this difference before contact is made to protect your equipment from ESD:

- Do not use mats designed to decrease electrostatic discharge as protection from electrical shock. Instead, use rubber mats that have been specifically designed as electrical insulators.

- Use a grounded wrist strap designed to prevent electrostatic discharge.
- Keep all components and printed circuit boards (PCBs) in their antistatic bags until ready for use.
- Touch a grounded metal object before removing any board from its antistatic bag.
- Do not let components or PCBs come into contact with your clothing, which may retain a charge even if you are wearing a wrist strap.
- Handle a board by its edges only; do not touch its components, peripheral chips, memory modules or contacts.
- When handling chips or modules, avoid touching their pins.
- Put the serverboard and peripherals back into their antistatic bags when not in use.
- For grounding purposes, make sure your computer chassis provides excellent conductivity between the power supply, the case, the mounting fasteners and the serverboard.

Chapter 3

Chassis Components

3-1 Overview

This chapter describes the most common components included with your chassis. Some components listed may not be included or compatible with your particular chassis model. For more information, see the installation instructions detailed later in this manual.

3-2 Components

Hard Drives and Peripheral Drives

The SC842 chassis supports up to five hot-swappable 3.5" hard drives (SC842TQ series) or up to five internal hard drives (SC842i series), and one peripheral drive bay which can be used to install one optional slim DVD-ROM drive and up to three 5-1/4" hard drives. For the latest shipping list, visit our Web site at: http://www.supermicro.com.

Fans

The SC842 chassis supports one 9 cm front cooling fan and two 8 cm rear exhaust fans. System fans for the SC842 chassis are powered from the serverboard. These fans are powered by 4-pin connectors.

Mounting Rails (Optional)

The SC842 can be placed on a four-post rack for secure storage and use. To set up your rack with the optional mounting rail, follow the step-by-step instructions included in this manual.

Power Supply

Each SC842 chassis model includes a high-efficiency power supply rated at 500, 665 or 865 Watts. In the unlikely event of a power supply failure, replacement is easily accomplished without tools.

3-3 Where to get Replacement Components

Although not frequently, you may need replacement parts for your system. To ensure the highest level of professional service and technical support, we strongly recommend purchasing exclusively from our Supermicro Authorized Distributors/ System Integrators/Resellers. A list of Supermicro Authorized Distributors/System Integrators/Reseller can be found at: http://www.supermicro.com. Click the Where to Buy link.

Chapter 4

System Interface

4-1 Overview

There are several LEDs on the control panel as well as others on the drive carriers to keep you constantly informed of the overall status of the system as well as the activity and health of specific components. SC842 models have two buttons on the chassis control panel: a reset button and an on/off switch. This chapter explains the meanings of all LED indicators and the appropriate response you may need to take.

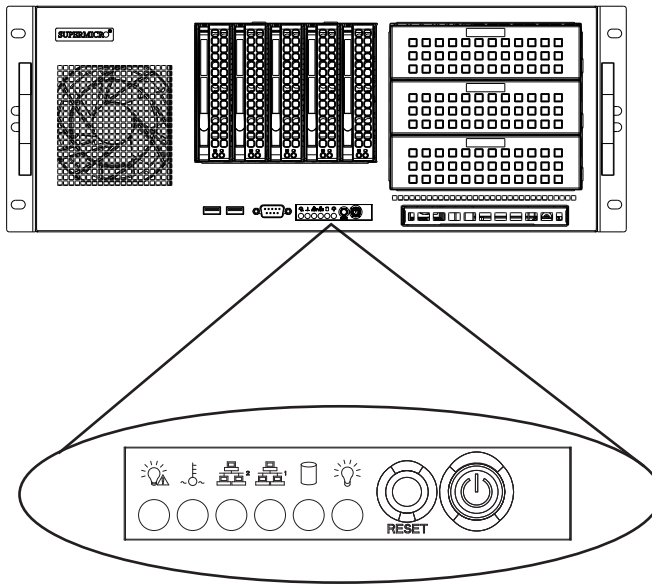
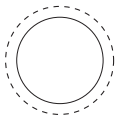


Figure 4-1: SC842 Front Panel

4-2 Control Panel Buttons

There are two push-buttons located on the front of the chassis. These are (in order from left to right), a reset button and a power on/off button.



- **Reset:** The reset button is used to reboot the system.

- **Power:** The main power switch is used to activate or remove power from the power supply to the server system. Turning off system power with this button removes the main power but keeps standby power supplied to the system. Therefore, you must unplug system before servicing.

4-3 Control Panel LEDs

The control panel located on the front of the SC842 chassis has six LEDs. These LEDs provide you with critical information related to different parts of the system. This section explains what each LED indicates when illuminated and any corrective action you may need to take.

- **Power Failure:** When this LED flashes, it indicates a power failure in the power supply.

- **Overheat/Fan Fail:** When this LED flashes it indicates a fan failure. When continuously on (not flashing) it indicates an overheat condition, which may be caused by cables obstructing the airflow in the system or the ambient room temperature being too warm. Check the routing of the cables and make sure all fans are present and operating normally. You should also check to make sure that the chassis covers are installed. Finally, verify that the heatsinks are installed properly. This LED will remain flashing or on as long as the overheat condition exists.

- **NIC2:** Indicates network activity on LAN2 when flashing.

- **NIC1:** Indicates network activity on LAN1 when flashing.

- **HDD:** Indicates IDE channel activity. SAS/SATA drive and/or DVD-ROM drive activity when flashing.

- **Power:** Indicates power is being supplied to the system's power supply units. This LED should normally be illuminated when the system is operating.

4-4 Drive Carrier LEDs

Each hard drive carrier has two LEDs.

- **Blue:** When illuminated, this blue LED (on the front of the drive carrier) indicates drive activity. A connection to the backplane enables this LED to blink on and off when that particular drive is being accessed.
- **Red:** The red LED to indicate a drive failure. If one of the hard drives fails, replace it with a compatible enterprise-level hard drive model.

Chapter 5

Chassis Setup and Maintenance

5-1 Overview

This chapter details the basic steps required to install components to the SC842 chassis. The only tool you will need is a Phillips head screwdriver. Print this chapter to use as a reference while setting up your chassis.

Review the warnings and precautions listed in the manual before setting up or servicing this chassis. These include information in Chapter 2: System Safety and the warning/precautions listed in the setup instructions.

5-2 Removing the Chassis Cover

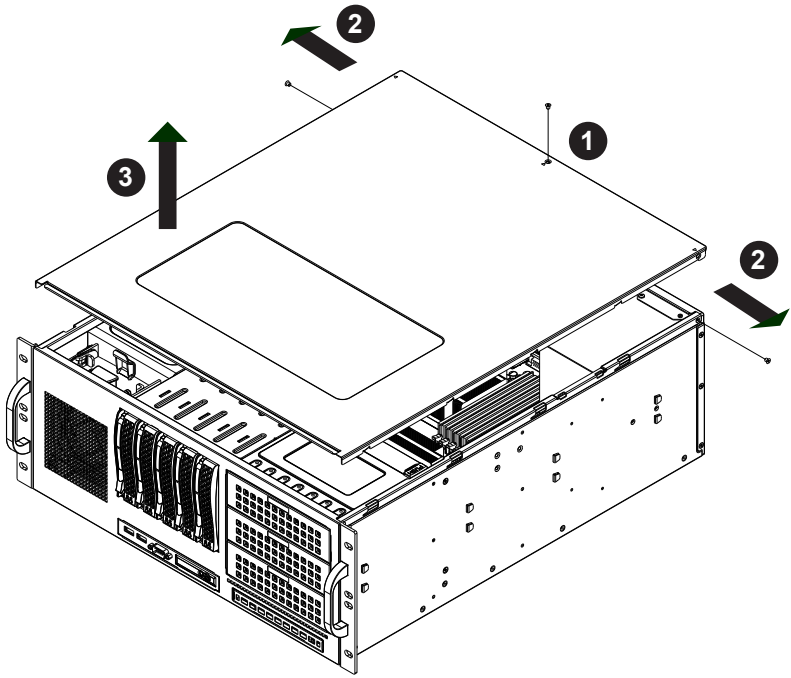


Figure 5-1: Removing the Chassis Cover

Removing the Chassis Cover

1. Remove the screw at the rear of the chassis and set it aside for later use.
2. Remove the two screws on the sides of the cover and set them aside.
3. Lift the cover up and off the chassis.

Warning: Except for short periods of time, do NOT operate the chassis without the cover in place. The chassis cover must be in place to allow proper airflow and prevent overheating.

5-3 Installing and Removing Hard Drives

The drives are mounted in drive carriers to simplify their installation and removal from the chassis. The SC842 chassis supports up to five 3.5" hard drives.

Removing Hard Drive Carriers (SC842TQ Series)

Removing the Hard Drive and Hard Drive Carriers

1. Press the release button on the drive carrier. This extends the drive carrier handle.

2. Use the handle to pull the drive carrier out of the chassis.

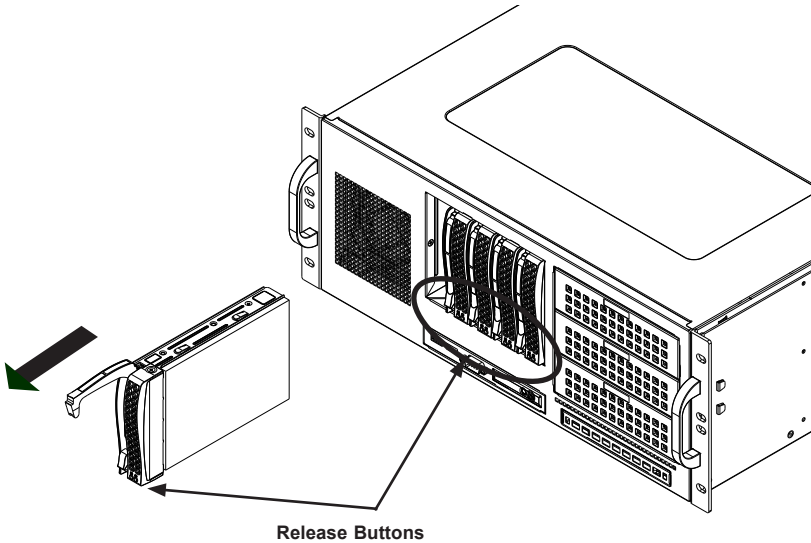


Figure 5-2: Removing the Hard Drive Carriers

Installing a Drive into the Drive Carrier (SC842TQ Series)

Installing a Hard Drive

1. Remove the two screws securing the dummy drive to the drive carrier.
2. Lift the dummy drive out of the drive carrier.
3. Place the hard drive carrier on a flat, stable surface such as a desk, table, or work bench.
4. Slide the hard drive into the carrier with the printed circuit board side facing down.
5. Carefully align the mounting holes in the hard drive and the carrier. Make sure the bottom of the hard drive and bottom of the hard drive carrier are flush.
6. Secure the hard drive using all six screws.
7. Replace the drive carrier into the chassis. Make sure to close the drive carrier using the drive carrier handle.

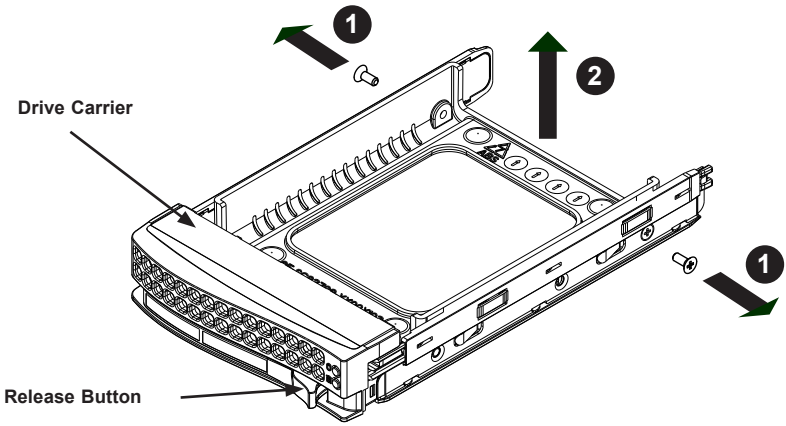


Figure 5-3: Removing the Dummy Drive from the Carrier

Warning! Enterprise level hard disk drives are recommended for use in Supermicro chassis and servers. For information on recommended HDDs, visit the Supermicro Web site at www.supermicro.com.

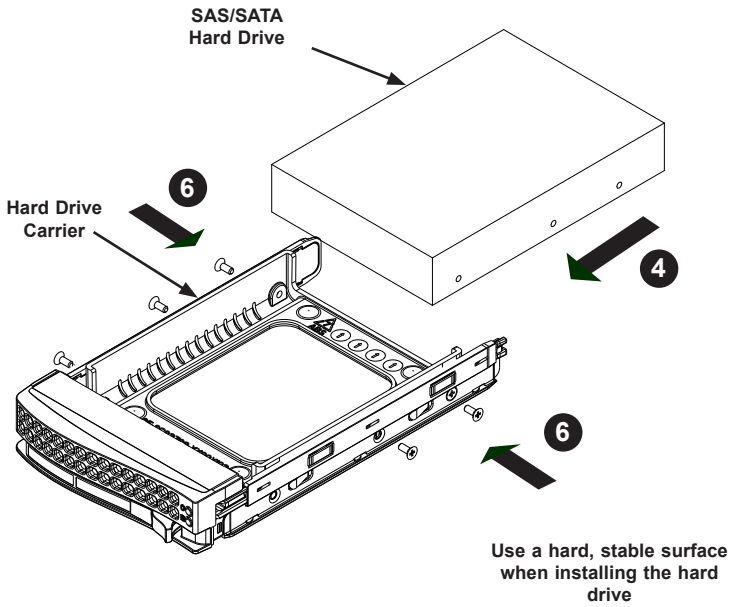


Figure 5-4: Installing a Drive into a Hard Drive Carrier

Installing Hard Drive Carriers (SC842TQ Series)

Installing the Hard Drive Carriers

1. Reinsert the hard drive carrier into the hard drive bay.
2. Gently push in the handle, which locks the drive carrier into the drive bay.

Removing the Hard Drive Cage (SC842i Series)

Removing the Hard Drive Cage

1. Power-down the system and disconnect the chassis from any source of power.

2. Remove the four screws securing the internal hard drive cage and bracket to the chassis as illustrated below and set them aside for later use.

3. Gently push the internal hard drive cage out through the front of the chassis.

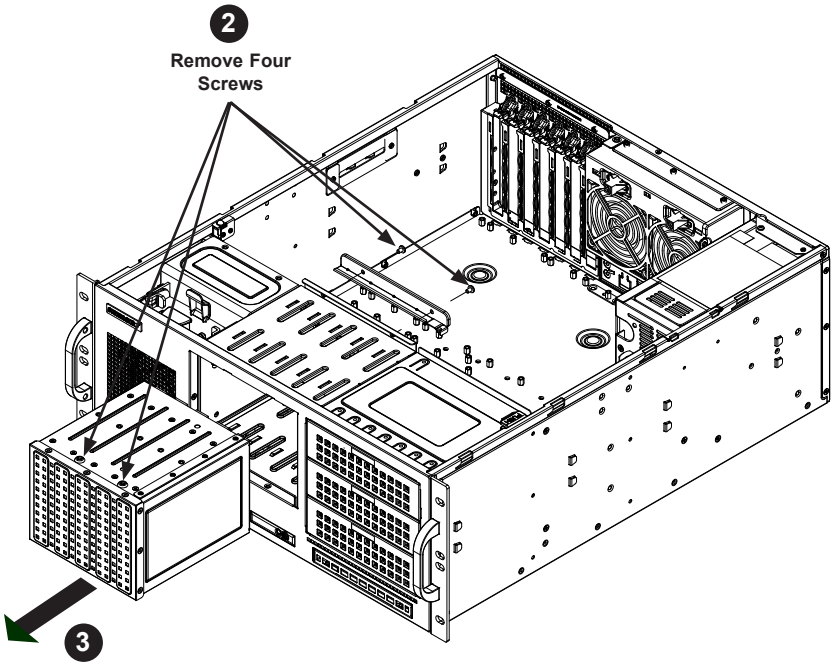


Figure 5-5 Removing the Internal HDD Cage

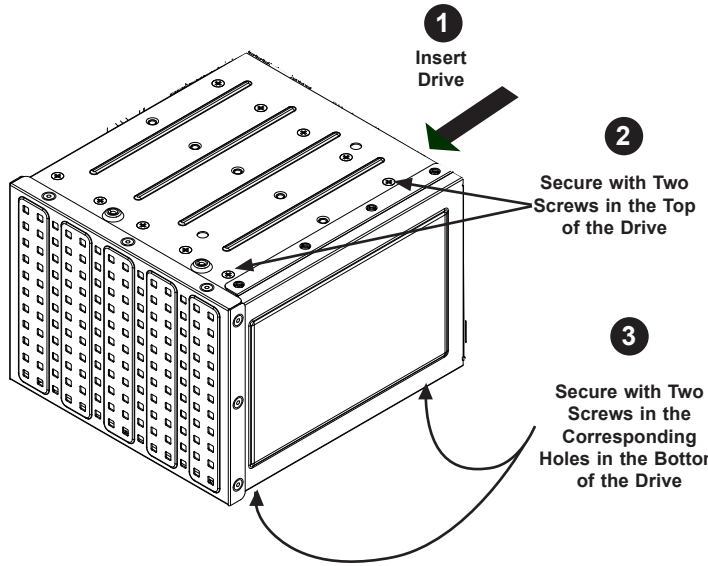


Figure 5-6: Installing Hard Drives into the Internal Hard Drive Cage

Installing Hard Drives into the Cage (SC842i Series)

Installing Drives into the Internal Hard Drive Cage

1. Insert a hard drive into the hard drive cage, aligning the holes in the drive with those in the cage.

2. Secure the drive to the top of the cage with two hard drive screws.

3. Secure the drive to the bottom of the cage with two hard drive screws.

Installing the Hard Drive Cage (SC842i Series)

Installing the Hard Drive Cage

1. Insert the hard drive cage through the front of the chassis.

2. Reinstall the four screws which were previously set aside to secure the hard drive cage and bracket to the chassis as illustrated below.

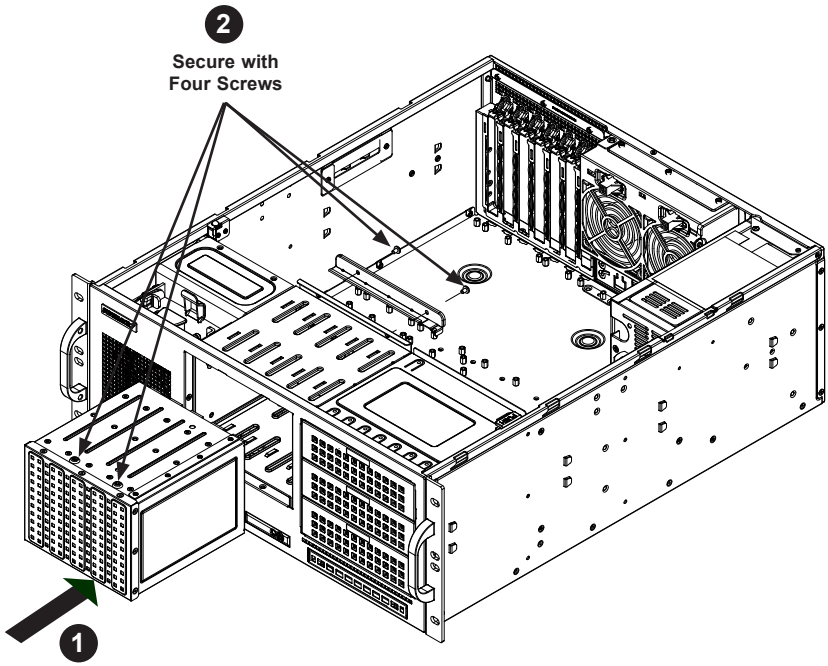


Figure 5-7 Installing the Internal HDD Cage

5-4 Installing an I/O Shield

Installing an I/O Shield

I/O shields help to hold the motherboard ports in place. Install the I/O shield that came with your motherboard before installing the motherboard.

1. Remove the chassis cover and disconnect the chassis from any power source.
2. Locate the I/O shield.
3. Push the I/O shield gently into the rear opening of the chassis, until it clicks into the secure position.

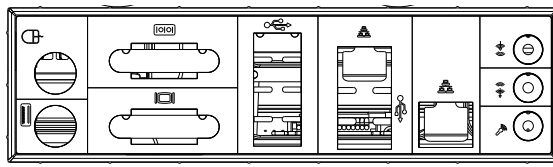


Figure 5-8: SC842 Chassis I/O Shield (Example)

5-5 Installing the Motherboard

Permanent and Optional Standoffs

Standoffs prevent short circuits by creating space between the motherboard and the chassis floor. The SC842 chassis includes permanent and optional removeable standoffs in locations used by most motherboards. These standoffs accept the rounded Phillips head screws included in the SC842 accessories packaging.

Some motherboards require additional screws for heatsinks, general components and/or to secure them to the chassis. Optional standoffs are included to support these motherboards. To use an optional standoff, you must secure a hexagonal post by screwing it into the necessary spot. Compare the mounting holes between the motherboard and the chassis, then add or remove the optional standoffs as needed.

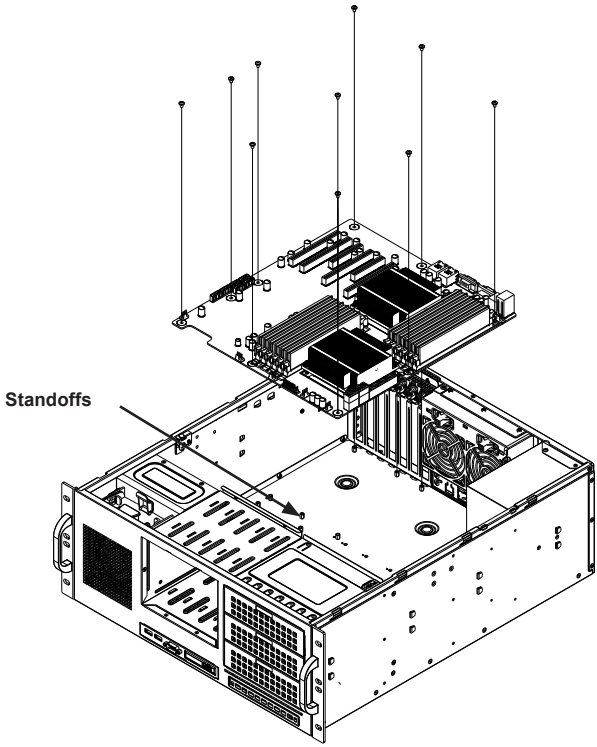


Figure 5-9: Motherboard Standoffs

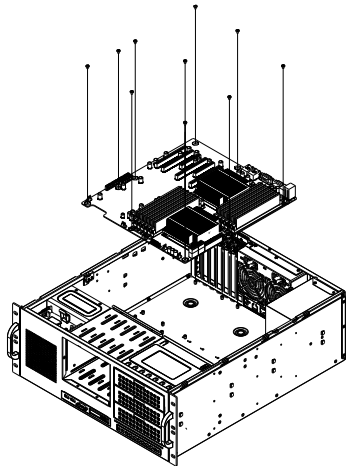


Figure 5-10: Installing the Motherboard

Motherboard Installation

Installing the Motherboard

1. Review the documentation that came with your motherboard. Become familiar with component placement, requirements, and precautions.

2. Confirm that the power supply is disconnected and lay the chassis on a flat surface.

3. Open the chassis cover.

4. Remove any packaging from the chassis.

5. If required by your motherboard, install standoffs in any areas that do not have a permanent standoff. To do this, tighten a hexagonal optional standoff into the chassis.

6. Lay the motherboard on the chassis aligning the permanent and optional standoffs.

7. Secure the motherboard to the chassis using the rounded, Phillips head screws. Do not exceed eight pounds of torque when tightening down the motherboard.

8. Secure the CPU(s) and heatsinks to the motherboard.

Expansion Card Setup

The SC842 chassis features seven PCI slots which support up to seven expansion cards.

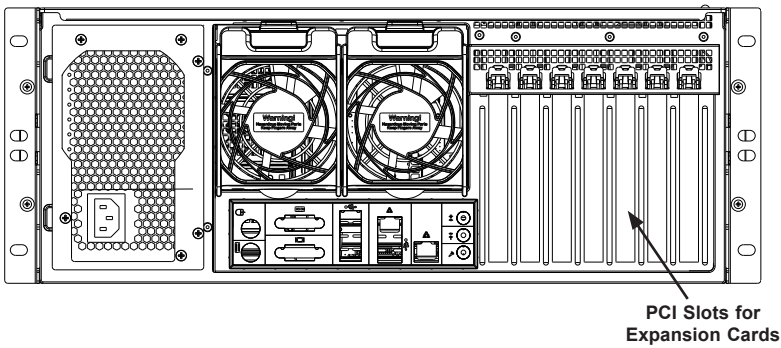


Figure 5-11: PCI Slots

Installing Expansion Cards

1. Remove the chassis cover and disconnect the chassis from any power source.

2. Locate the motherboard port which is aligned with the card slot you want to install.

3. Each PCI slot cover is secured by one screw located on the top of the cover. Remove this screw and slide the slot cover up and out of the slot. Set the screw aside for use in Step 5.

4. Gently slide the expansion card into the correct motherboard slot. f necessary, slide the card into the PCI card guide and lock it. Never force a component into a motherboard or the chassis.

5. Secure the expansion card with the screw set aside in Step 3.

Rear System Fans

The SC842 chassis includes up to two rear exhaust fans.

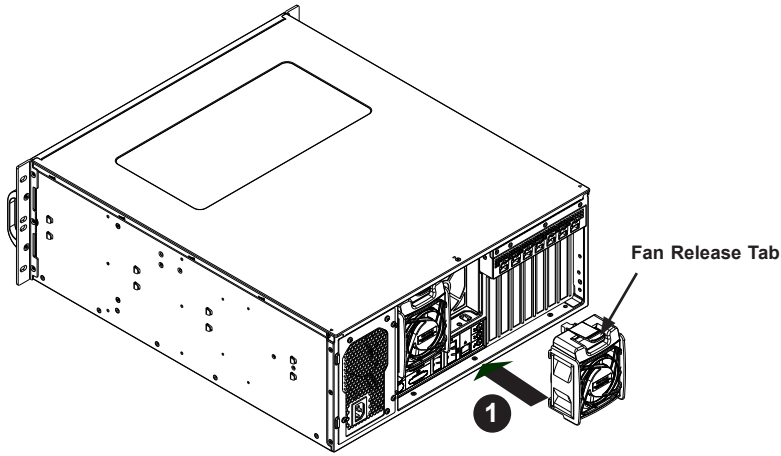


Figure 5-12: Installing the Rear Fan

Installing the Rear System Fans

Installing the Rear System Fans

1. Slide the rear fan into the slot as illustrated. The fan release tab is located just above the edge of the fan housing.

2. Ensure that the fan is secured in the fan cage and that the fan cable is connected to the motherboard.

Checking the Server's Air Flow

Checking the Air Flow

1. Make sure there are no objects to obstruct the airflow in and out of the server. If necessary, route and organize the cables appropriately.

2. Do not operate the chassis without drive carriers in the drive bays.

5-6 Power Supply

The SC842 chassis includes either a 500, 665 or 865 Watt power supply. In the unlikely event of a power supply failure the system must be powered-down and the power supply removed using a Phillips head screw driver.

Replacing the Power Supply

Replacing the Power Supply

1. Remove the chassis cover and disconnect the chassis from all sources of power.
2. Unscrew the screws securing the power supply to the chassis. Set these screws aside for later use.
3. Pull the power supply up and out of the chassis.
4. Replace the failed power supply module with a new module of the same type or a compatible power supply module.
5. Slide the power supply into place and secure using the six screws which were previously set aside.
6. Plug the AC power cord into the module and power up the server.

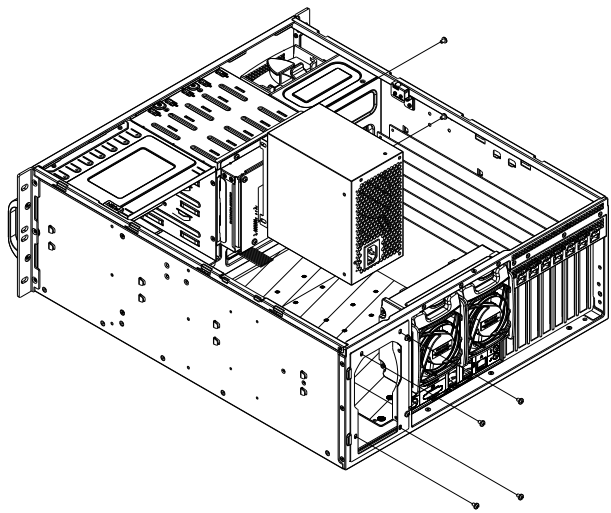


Figure 5-13: Installing the Power Supply

Installing the DVD-ROM and Peripheral Drive

SC842 chassis models supports a slim DVD-ROM and up to three 5-1/4" peripheral drives.

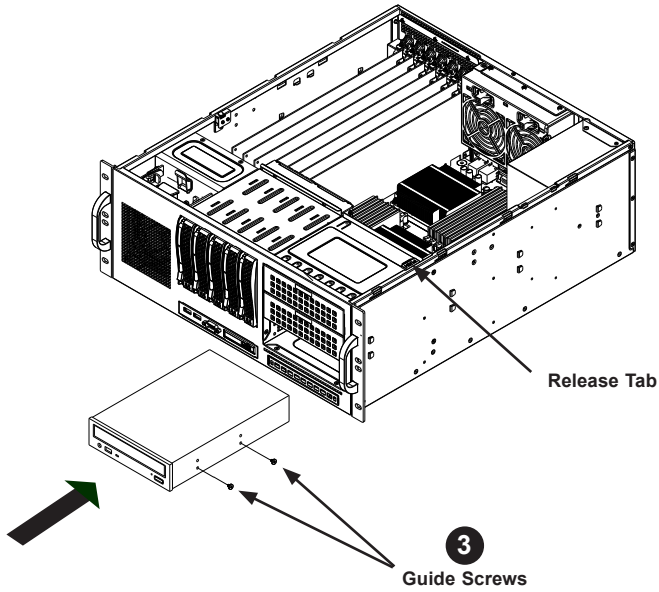


Figure 5-14: Installing the Peripheral Drive

Installing a Peripheral Drive

1. Disconnect the chassis from any power source and remove the cover.

2. **If adding a drive to the chassis, r**emove the mini-bezel from the drive bay The mini-bezel is the small grating that covers the drive bay. Remove this by simply pulling it out of the bay.
   If replacing an existing drive, remove the existing drive by depressing the release tab, then pulling the drive out of the chassis.

3. Attach the two guide screws which are included in the accessory box.

4. Insert the new drive unit in the slot until the release tab locks into place.

5. Connect the data and power cables to the motherboard.

Chapter 6

Rack Installation

6-1 Overview

This chapter provides a quick setup to install the chassis into a rack. Following these steps in the order given should enable you to complete the rack installation within a minimal amount of time.

6-2 Unpacking the System

Inspect the box the chassis was shipped in and note if it was damaged in any way. If the chassis itself shows damage you should file a damage claim with the carrier who delivered it.

Decide on a suitable location for the rack unit that will hold the chassis. It should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated. You will also need it placed near a grounded power outlet. Be sure to read the Rack and Server Precautions in the next section.

6-3 Preparing for Setup

Rail assemblies (two inner rails, two outer rails and the mounting screws you will need to install the system into a four-post rack) are optional features on the SC842 chassis and can be purchased separately. Refer to the Supermicro Web site at www.supermicro.com for the rail model number and ordering information. Please read this section in its entirety before beginning the installation procedure outlined in the sections that follow.

Choosing a Setup Location

- Leave enough clearance in front of the rack to enable you to open the front door completely (~25 inches).
- Leave approximately 30 inches of clearance in the back of the rack to allow for sufficient airflow and ease in servicing.

- This product is for installation only in a Restricted Access Location (dedicated equipment rooms, service closets and similar environments).

Warnings and Precautions!

Rack Precautions

- Ensure that the leveling jacks on the bottom of the rack are fully extended to the floor with the full weight of the rack resting on them.
- In single rack installation, stabilizers should be attached to the rack.
- In multiple rack installations, the racks should be coupled together.
- Always make sure the rack is stable before extending a component from the rack.
- You should extend only one component at a time - extending two or more simultaneously may cause the rack to become unstable.

General Server Precautions

- Review the electrical and general safety precautions that came with the components you are adding to your chassis.
- Determine the placement of each component in the rack *before* you install the rails.
- Install the heaviest server components on the bottom of the rack first, and then work up.
- Use a regulating uninterruptible power supply (UPS) to protect the server from power surges, voltage spikes and to keep your system operating in case of a power failure.
- Allow the hot plug hard drives and power supply modules to cool before touching them.

- Always keep the rack's front door and all panels and components on the servers closed when not servicing to maintain proper cooling.

Rack Mounting Considerations

Ambient Operating Temperature

If installed in a closed or multi-unit rack assembly, the ambient operating temperature of the rack environment may be greater than the ambient temperature of the room. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature.

Reduced Airflow

Equipment should be mounted into a rack so that the amount of airflow required for safe operation is not compromised.

Mechanical Loading

Equipment should be mounted into a rack so that a hazardous condition does not arise due to uneven mechanical loading.

Circuit Overloading

Consideration should be given to the connection of the equipment to the power supply circuitry and the effect that any possible overloading of circuits might have on overcurrent protection and power supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

Reliable Ground

A reliable ground must be maintained at all times. To ensure this, the rack itself should be grounded. Particular attention should be given to power supply connections other than the direct connections to the branch circuit (i.e. the use of power strips, etc.).

6-4 Rack Mounting

Rack Mounting Overview

This section provides information on installing the SC842 chassis into an open rack. There are a variety of rack units on the market, which may mean the assembly procedure will differ slightly. You should also refer to the installation instructions that came with the rack unit you are using.

Mounting the Chassis in an Open (Telco) Style Rack

To install the chassis into a Telco type rack, use one L-shaped bracket on either side of the chassis (two total). First, determine how far follow the server will extend out the front of the rack. Larger chassis should be positioned to balance the weight between front and back. If a bezel is included on your chassis, remove it, then attach the two front brackets to each side of the chassis. Finish by sliding the chassis into the rack and tightening the brackets to the rack. Additional L-brackets may be purchased separately if additional support is required.

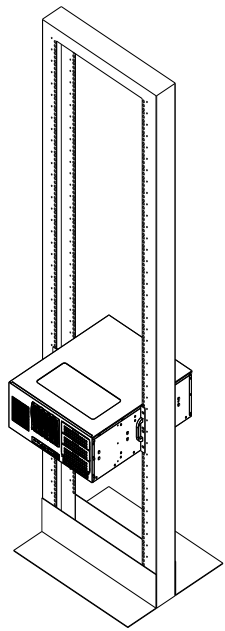


Figure 6-1: Mounting in an Open Style Rack

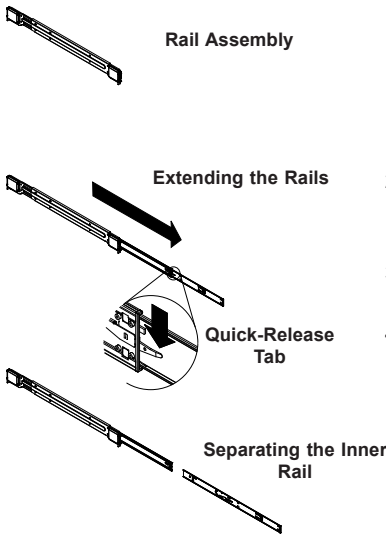
6-5 Rack Mounting with the Optional Rail System

Rail System Overview

This section provides information on installing the SC842 chassis into a four-post rack unit with the optional quick-release rails. There are a variety of rack units on the market, which may mean the assembly procedure will differ slightly. You should also refer to the installation instructions that came with the rack unit you are using.

Separating the Sections of the Rack Rails

The optional rail package includes two rail assemblies in the rack mounting kit. Each assembly consists of two sections: an inner fixed chassis rail that secures directly to the server chassis and an outer fixed rack rail that secures directly to the rack itself.



Separating the Inner and Outer Rails

1. Locate the rail assembly in the chassis packaging.
2. Extend the rail assembly by pulling it outward.
3. Press the quick-release tab.
4. Separate the inner rail from the outer rail assembly.

Figure 6-2: Separating the Rack Rails

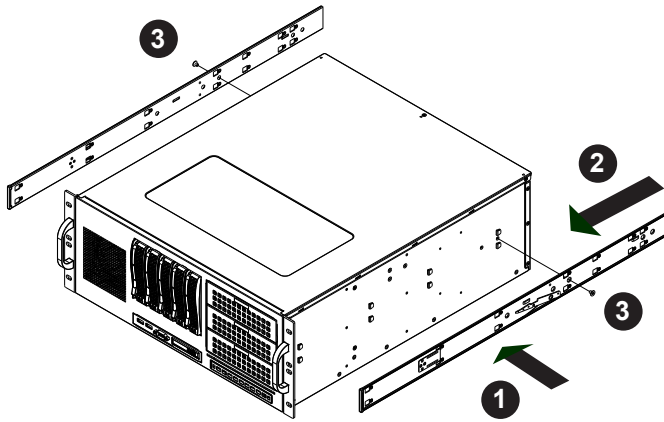


Figure 6-3: Installing the Inner Rails

Installing the Inner Rails

Installing the Inner Rails

1. Place the inner rails on the side of the chassis aligning the hooks of the chassis with the rail holes. Make sure the rail faces "outward".

2. Slide the inner rail toward the front of the chassis.

3. Secure the chassis with two screws as illustrated. Repeat steps 1 and 2 for the other inner rail.

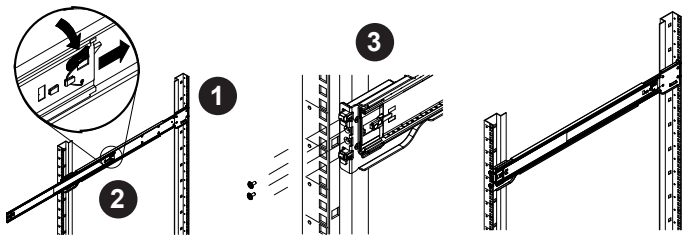


Figure 6-4: Assembling the Outer Rails

Outer Rack Rails

Outer rails attach to the rack and hold the chassis in place.

Installing the Outer Rails to the Rack

1. Secure the back end of the outer rail to the rack, using the screws provided.
2. Press the button where the two outer rails are joined to retract the smaller outer rail.
3. Hang the hooks of the rails onto the rack holes and if desired, use screws to secure the front of the outer rail onto the rack.
4. Repeat steps 1-3 for the remaining outer rail.

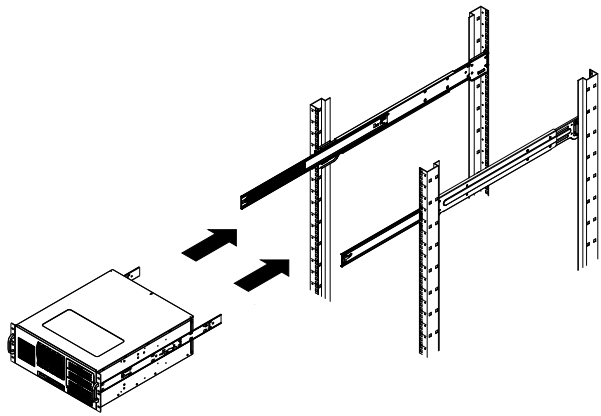


Figure 6-5: Installing the Chassis into a Rack

Installing the Chassis into a Rack

1. Extend the outer rails as illustrated above.

2. Align the inner rails of the chassis with the outer rails on the rack.

3. Slide the inner rails into the outer rails, keeping the pressure even on both sides. When the chassis has been pushed completely into the rack, it should click into the locked position.

4. Optional screws may be used to secure the front of the chassis to the rack.

Appendix A

SC842 Chassis Cables

A-1 Overview

This appendix lists supported cables for your chassis system. It only includes the most commonly used components and configurations. For more compatible cables, refer to the manufacturer of the motherboard you are using and our Web site at: www.supermicro.com.

A-2 Cables List

SC842TQ-865B, SC842TQ-665B			
Part #	**Type**	**Length**	**Description**
CBL-0044L	Cable	2'	SATA cable
CBL-0087	Ribbon, Round	20"	16-pin to 16-pin ribbon cable for control panel
CBL-0084L	Cable	6"	Front control cable, 16-pin split cable
CBL-0286L	Cable	30 cm	4-pin to 4-pin rear fan power extension with square header.
CBL-0336L	Cable	57 cm	4-pin middle fan power extension
-	Cable	6'	Regional power cord

SC842i-500B			
Part #	**Type**	**Length**	**Description**
CBL-0286L	Cable	30 cm	4-pin to 4-pin rear fan power extension with square header
CBL-0087	Ribbon, Round	20"	16-pin to 16-pin ribbon cable for control panel
CBL-0084L	Cable	6"	Front control cable, 16-pin split cable
CBL-0336L	Cable	57 cm	4-pin middle fan power extension
-	Cable	6'	Regional power cord

Notes

Appendix B

SC842 Power Supply Specifications

This appendix lists power supply specifications for your chassis system.

SC842i-500B	
	500W
MFR Part #	PWS-502-PQ
Rated AC Voltage	100 - 240V 50-60Hz 7-3.5 Amp
+5V standby	3 Amp
+12V1	17 Amp
+12V2	17 Amp
+12V3	17 Amp
+12V4	18 Amp
-12V	0.5 Amp
+5V	20 Amp
+3.3V	15 Amp

SC842TQ-665B	
	665W
MFR Part #	PWS-665-PQ
Rated AC Voltage	100 - 240V 50 - 60Hz 10 -5 Amp
+5V standby	6 Amp
+12V	54 Amp
+5V	30 Amp
+3.3V	24 Amp
-12V	0.5 Amp

SC842TQ-865B	
	865W
MFR Part #	PWS-865-PQ
Rated AC Voltage	100 - 240V 50 - 60Hz 12 - 6 Amp
+5V standby	6.5 Amp
+12V	70 Amp
+5V	30 Amp
+3.3V	30 Amp
-12V	1 Amp

Appendix C

SAS-842TQ Backplane Specifications

To avoid personal injury and property damage, carefully follow all the safety steps listed below when accessing your system or handling the components.

C-1 ESD Safety Guidelines

Electrostatic Discharge (ESD) can damage electronic components. To prevent damage to your system, it is important to handle it very carefully. The following measures are generally sufficient to protect your equipment from ESD.

- Use a grounded wrist strap designed to prevent static discharge.
- Touch a grounded metal object before removing a component from the antistatic bag.
- Handle the backplane by its edges only; do not touch its components, peripheral chips, memory modules or gold contacts.
- When handling chips or modules, avoid touching their pins.
- Put the card and peripherals back into their antistatic bags when not in use.

C-2 General Safety Guidelines

- Always disconnect power cables before installing or removing any components from the computer, including the SAS-842TQ backplane.
- Disconnect the power cable before installing or removing any cables from the backplane.
- Make sure that the SAS-842TQ backplane is securely and properly installed on the motherboard to prevent damage to the system due to power shortage.

C-3 An Important Note to Users

All images and layouts shown in this user's guide are based upon the latest backplane revision available at the time of publishing. The card you have received may or may not look exactly the same as the graphics shown in this manual.

C-4 Introduction to the SAS-842TQ Backplane

The SAS-842TQ backplane has been designed to utilize the most up-to-date technology available, providing your system with reliable, high-quality performance.

This manual reflects SAS-842TQ Revision 1.01, the most current release available at the time of publication. Always refer to the Supermicro Web site at www.supermicro.com for the latest updates, compatible parts and supported configurations.

C-5 Front Connectors

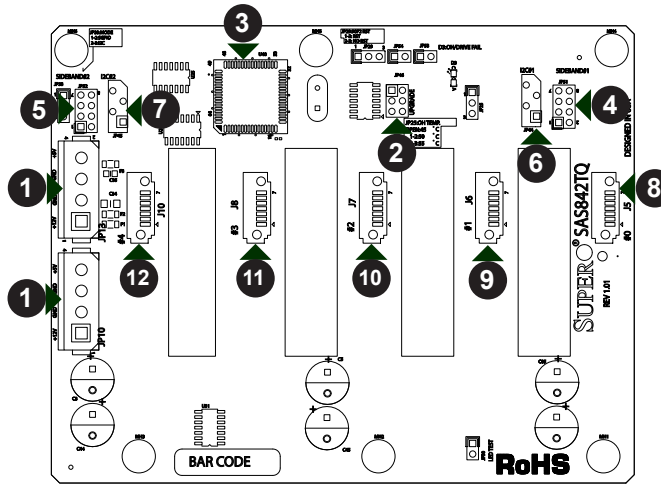


Figure C-1: Front Connectors

Front Connectors and Jumpers

1. Power Connectors (4-pin): JP10, JP13
2. Upgrade Pin: JP46
3. MG9072 Chip
4. Sideband #1: JP51
5. Sideband #2: JP52
6. I²C Connector #1: JP44
7. I²C Connector #2: JP45
8. Connector #0: J5
9. Connector #1: J6
10. Connector #2: J7
11. Connector #3: J8
12. Connector #4: J10

C-6 Front Connector and Pin Definitions

#1. Backplane Main Power Connectors

These 4-pin connectors designated JP10 and JP13 provide power to the backplane. See the table on the right for pin definitions.

Backplane Main Power 4-Pin Connector	
Pin#	Definition
1	+12V
2 and 3	Ground
4	+5V

#2 Upgrade Connector

The upgrade connector is designated JP46 and is for the manufacturer's diagnostic purposes only.

#3. MG9072 Chip

The MG9072 is an enclosure management chip that supports the SES-2 controller and SES-2 protocols.

#4 and #5. Sideband Connectors

The sideband connectors are designated JP51 and JP52. For SES-2 to work properly, you must connect an 8-pin sideband cable. See the table to the right for pin definitions.

Sideband Connectors			
Pin #	**Definition**	**Pin #**	**Definition**
2	SDIN/ Backplane Addressing (SB5)	1	Controller ID (SB6)
4	SDOUT/I²C Reset (SB4)	3	GND (SB2)
6	GND (SB3)	5	SLOAD/ SDA (SB1)
8	Backplane ID (SB7)	7	SCLOCK/ SCL (SB0)

#6 and #7. I²C Connectors

The I²C connectors, designated JP44 and JP45, are used to monitor HDD activity and status. See the table on the right for pin definitions.

I²C Connector Pin Definitions

Pin#	Definition
1	Data
2	Ground
3	Clock
4	No Connection

#8 - #12. SAS/SATA Connectors

The SAS/SATA connectors are numbered 0 through 4. Each may be connected to the system with a SAS or SATA cable.

C-7 Front Jumper Locations and Pin Definitions

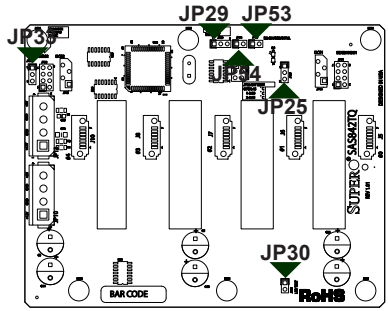
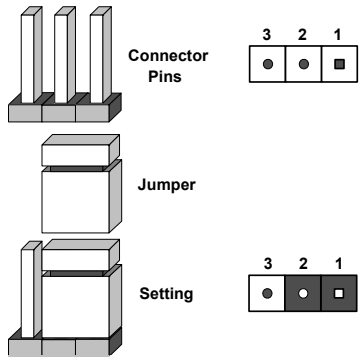


Figure C-2: Front Jumpers

Explanation of Jumpers

To modify the operation of the backplane, jumpers can be used to choose between optional settings. Jumpers create shorts between two pins to change the function of the connector. Pin 1 is identified with a square solder pad on the printed circuit board. Note: On two pin jumpers, "Closed" means the jumper is on and "Open" means the jumper is off the pins.



Jumper Settings		
Jumper	**Jumper Settings**	**Note**
JP25	Open: 45 degrees Celcius 1-2: 50 degrees Celcius 2-3: 55 degrees Celcius	OH TEMP: Overheat temperature settings
JP29	1-2: Reset 2-3: No reset	MG9072 chip reset
JP30	---	For manufacturer's use only
JP53	---	For manufacturer's use only
JP54	---	For manufacturer's use only

I²C and SGPIO Mode Jumper Settings

This backplane can utilize I²C or SGPIO. SGPIO is the default mode and can be used without making changes to your jumpers. The following information details which jumpers must be configured to use I²C mode or restore your backplane to SGPIO mode.

I²C and SGPIO Settings		
Jumper	**SGPIO Jumper Setting (Default)**	**I²C Jumper Setting**
JP33	1-2	2-3

Front LED Indicators

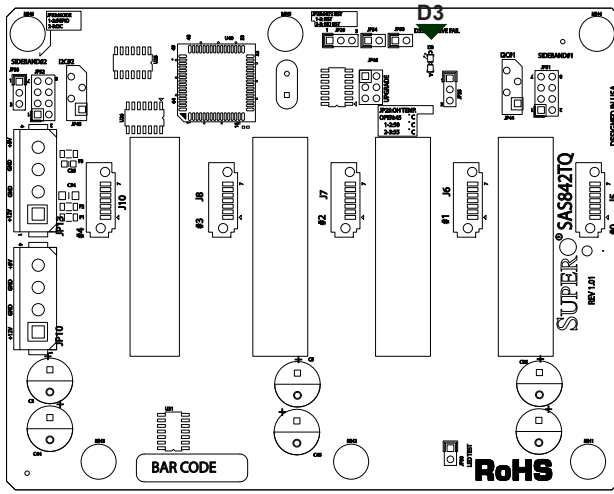


Figure C-3: Front LEDs

Front LEDs		
LED	**State**	**Specification**
D3	On	Overheat or Drive Failure

C-8 Rear Connectors and LED Indicators

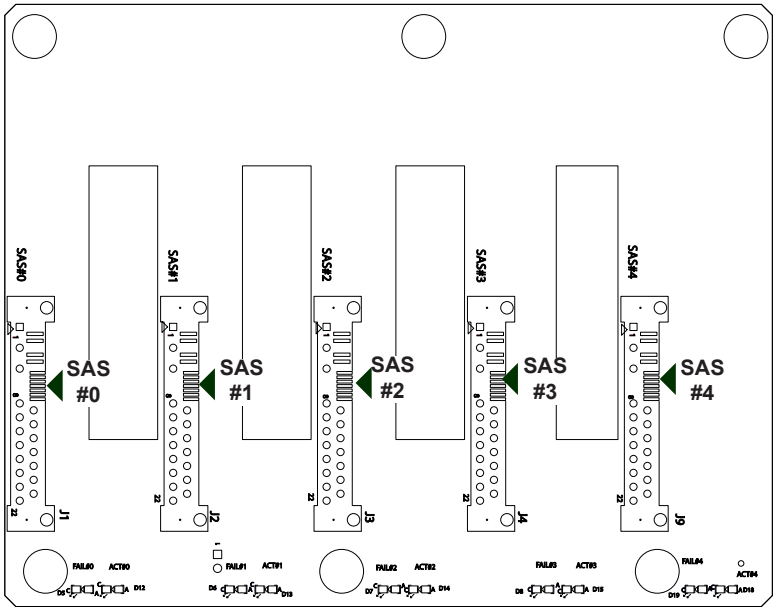


Figure C-4: Rear Connectors

Rear SAS/SATA Connectors		
Rear Connector	**Connector Number**	**SAS/SATA Drive Number**
SAS #0	J1	SAS/SATA HDD #0
SAS #1	J2	SAS/SATA HDD #1
SAS #2	J3	SAS/SATA HDD #2
SAS #3	J4	SAS/SATA HDD #3
SAS #4	J9	SAS/SATA HDD #4

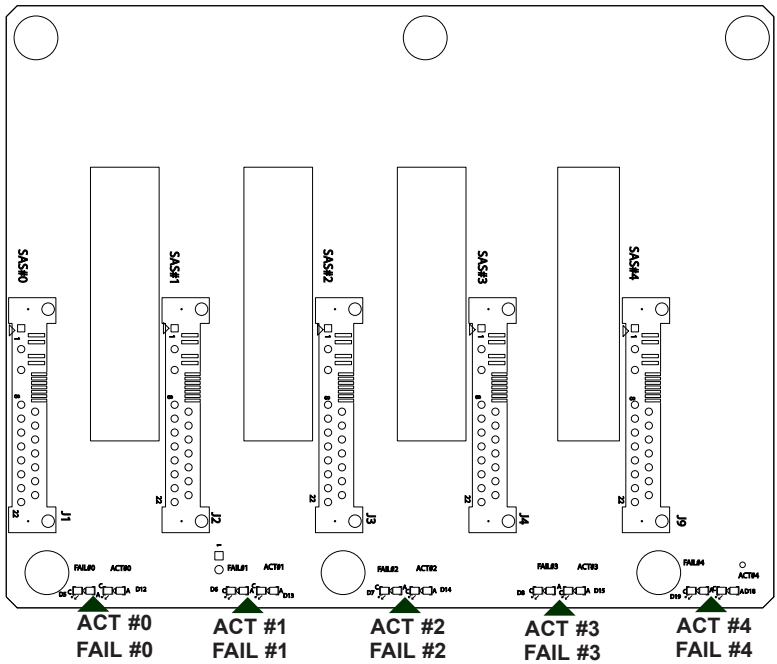


Figure C-5: Rear LEDs

Rear LED Indicators		
Rear Connector	**Hard Drive Activity**	**Failure LED**
SAS #0	D12	D5
SAS #1	D13	D6
SAS #2	D14	D7
SAS #3	D15	D8
SAS #4	D18	D19

Disclaimer (cont.)

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